MODIS TECHNICAL TEAM MEETING

Building 33, Room E125
July 19, 2000

Vince Salomonson chaired the meeting. Present were Ken Anderson, Bill Barnes, Barbara Conboy, Wayne Esaias, Bruce Guenther, Dorothy Hall, Ed Masuoka, Bruce Ramsay (NOAA), and Skip Reber. Meeting minutes were taken by Mike Heney.

1.0 SCHEDULE OF EVENTS

PI Processing Meeting GSFC	Wednesdays at 3 PM [Note new time]
COSPAR 2000 Warsaw, Poland	July 16–23, 2000
COSPAR/IRS Joint Symposium Warsaw, Poland and St. Petersburg, Russia	July 21 and July 24, 2000
IGARSS 2000 Honolulu, HI	July 24–28, 2000
IRS-2000 St. Petersburg, Russia.	July 24–29, 2000
EOS/SPIE Symposium on Remote Sensing Barcelona, Spain	September 25–29, 2000
SPIE's Remote Sensing Japan 2000 Sendai, Japan	October 9–12, 2000
VENICE-2000 (Oceans from Space) Venice, Italy	October 9–13, 2000
Ocean Optics XV Monaco	October 16–20, 2000
PORSEC 2000 Goa, India	December 5–8, 2000
AGU Fall Meeting San Francisco, CA	December 15–19, 2000
Aqua Launch	December 21, 2000

2.0 MINUTES OF THE MEETING

2.1 Instrument

Bruce Guenther reported that in Version 2.4.3 of the Level 1B code problem detectors on Terra's MODIS instrument are going to be flagged, and that an artificial will be constructed and supplied in the product for the non-functional detectors. The artificial value will be the linear average of the adjacent (in track) detector values. Science algorithms have a number of options with regard to flagged detectors - they can discard the data, use it as is, or apply their own algorithms to determine how to use the data. If users forget to look at the flags, bad science will result.

Wayne Esaias stated that he would prefer the original value to be left in place and flagged rather than have it filled and flagged; it was reported that Michael King prefers a fill value (such as zero) that would stand out. The use of an average detector value rather than an all-zeros or all-ones fill value was suggested by Paul Menzel, and was chosen because it yields better imagery. At this point in the instrument's life cycle, there is a premium on good-looking MODIS imagery. The fill value may be revisited at a later point when we start getting to peer-reviewed science. Dorothy Hall asked whether data products could be released once the flags are in place and being honored; Guenther responded in the affirmative.

Ken Anderson reported that opening the door had no effect on focal plane assembly (FPA) temperature; SBRS is now leaning towards ice buildup as the cause, and will recommend outgassing all three Radiative Cooler stages. The focal plane will be turned off; they can't keep the VIS and NIR going due to power load constraints. After outgassing is completed, all gains will be reset to their initial at-launch values in order to compare the instrument to its initial state; once this is complete, the gains can then be returned to the desired science values. Anderson noted that heater fluctuation is a secondary possibility as a cause for the icing.

It was noted that the project needs to make a decision on whether to go to the B side electronics, and whether to do so before or after outgassing. The consensus was that any switchover would have to occur after outgassing, in order to allow for before-and-after performance comparisons to see if the outgassing had any effect.

Guenther noted that he was limited to 12.5 days of outgassing at the start of the mission; he had wanted to do a full 14 days. There was some concern raised over possible damage to the detectors from overheating, which resulted in the shorter outgassing time. He would like up to 7 days on this outgassing, if possible.

Bruce Guenther will be sending the following to all MODIS Science Team members regarding plans for outgassing the MODIS instrument:

> The temperature of the cooled focal planes reached 84 K today. This now is a full 1 K above the preferred thermal control temperature. Santa Barbara Remote Sensing is about to recommend that we perform a cooler outgas sequence, with the expectation that the Radiative Cooler has ice on

some exterior surfaces. The overall sequence will involve an interruption of (all bands) MODIS data for several days (3-5 we now guess) and an additional 2-3 days of SWIR-MWIR-LWIR data until the cooler returns the focal planes to operating temperatures. We need prompt feedback from the Science Team with your recommended schedule on accomplishing this cooler outgas sequence. Our early estimate is that we want to do this as soon as possible. Due to logistics issues at getting the sequence approved and scheduled it is unlikely that we could start any earlier than 31 July. In particular we need to know what major field measurements you are making in August and September for which you cannot find substitute measurements, and that you prefer we support with MODIS measurements.

2.2 Oceans Group

Wayne Esaias had three items to discuss.

Regarding Ocean's data release schedule, the earliest possible release date would be the end of September. Miami expects to get the software done by start of August; it then typically takes 2 months to get packages installed into the DAAC. There are challenges to meet that schedule. Getting ready for Aqua will affect things. The DAAC will not have ability to ingest all level 3 data; that still needs to be addressed. Meeting the data delivery schedule requires (and depends on) ECS, SDST, and the DAAC to complete some work.

Esaias reported that Dennis Clark has 6 good coincident MOCE data sets with MODIS data, several of these took advantage of MODIS Direct Broadcast data out of Hawaii. Miami has processed the appropriate granules, with and without corrections. Vince Salomonson noted that the BBC had contacted him looking for a clear MODIS image over Hawaii. It was noted that Dennis Clark would have an open house at IGARRS at 10:00 am.

Esaias reported that Bob Evans had informed him that, based on the RVS corrections, a 4-micron SST algorithm has been developed. This should help with path-length differences and provide better polarization correction. Miami will redo detector normalization, and start doing calibration to bring MODIS and MOCE data into line (this will include atmospheric corrections). There is about a 0.5 degree SST difference between mirror side 1 and side 2. There are also some residual RVS effects in the data, which you would be able to see in a deep-space look. Guenther noted that he expects no improvement in flat-fielding for the shortwave bands once the structure is corrected out; Esaias will discuss this further with Guenther off-line to clarify this.

2.3 NOAA

Bruce Ramsay, NOAA / NESDIS, agreed to a request from Vince Salomonson, NASA / GSFC, to locate available documentation on the agreement between NOAA and NASA for the operationalization of MODIS data and imagery within NOAA. Products produced under the agreement include the following PGEs: 01 Level 1A, Geolocation Files, 02 Level 1B, 03 L2 Cloud Masks / Profiles, 04 L2

Atmosphere, 06 L2 Clouds, 07 L2 Snow Cover, 08 L2 Sea Ice, 09 L2 Ocean Color, 10 L2 SST, 17 Oceans Ancillary Meteorological Preprocessor, and 19 Oceans Ancillary Ozone Preprocessor. B. Ramsay noted that within NOAA / NESDIS, tentative approval from an internal funding source has been given to fund a modest extension of MAS flight hours for the acquisition of snow and ice data in support of NESDIS snow and ice mapping validation objectives.

2.4 Data Systems

Ed Masuoka reported that he had a good meeting with EDOS representatives. The MODIS concerns about sparse data were acknowledged, it was recognized that the gaps in delivered data are preventing MODIS from producing 8-, 16-, and 30- day products. Problems with the C1 system were discussed. Staffing was reported to be an issue on the CSOC side. There is some concern about the impacts of the new system and preparing for Aqua – being ready for a December launch is an issue.

Disk space has been added to the PDR system, which allows them to produce 3-4 days worth of products. They are trying to figure out how to make the flow of products back to EDOS / EDC DAAC work better.

Masuoka reports that they now have most of days 169 to 185, which makes up two back-to-back weeks. Land had changed the way they nest algorithms, once that was accommodated, the 8-day products ran like gangbusters.

Skip Reber suggested that the problems with data flow lies not with the data rate, but rather the number of interfaces. He noted that Landsat 7 has a similar data rate, but has data coming in through only two ground stations. With fewer products and no need to worry about data coming in chronologically, the Landsat 7 system has far less complexity - and correspondingly fewer data flow problems.

3.0 ACTION ITEMS

3.1 Action Items Carried Forward

1. Esaias: Prepare a group of charts for the next MODIS Technical Team meeting that delineates the relevant issues related to the Band 31 / 32 gain change and the recommendation that Tmax should be set at 340K for both bands.

2. Guenther: Circulate recommendation to Discipline Leaders on plans to flag and fill dead detectors. Responses from Discipline Leads are needed by this time next week.

3. MODIS Science Team: Send updates on MODIS metadata terms / valids to Skip Reber (reber@skip.gsfc.nasa.gov). These are terms that enable users to search MODIS data. This is part of a request to the Terra Instrument teams to update metadata terms.

Status: This action is open.

4. Discipline Leads: Send feedback to Murphy and Guenther on setting flags for dead (non-functional) detectors while they are set to zero. Currently, MCST would like MODIS Science users to provide feedback on which detectors are dead.

Status: This action is open.

5. Discipline Leads: Send MODIS Data Product table updates to Reber with a copy to Murphy. The MODIS Data Products table is on the Web at: http://eosdatainfo.gsfc.nasa.gov/eosdata/terra/modis/modis_dataprod.html

Status: This action is open.

6. Masuoka: Submit an EOS-PM Data Product Update to ESDIS.

Status: This action item remains open.

7. Vermote: Remove password protection from MODLAND graphic that displays gaps in MODIS data.

Status: This action is open.

8. Masuoka: Represent MODIS concerns on data throughput to EDOS.

Status: This action is open.